

## CLAIMS

What is claimed is

1. An exercise apparatus comprising:

a generally rectangular frame

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having a head end,

a foot end,

a hinged left rail having a front section and a rear section, so that its front and rear section may be folded to a substantially vertical position, and

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a hinged right rail, parallel to the left rail, the right rail having a front section and a rear section, so that its front and rear section may be folded to a substantially vertical position;

a movable carriage mounted on the frame, such that the carriage may be moved along the left rail and right rail between the head and foot ends, the carriage having a generally flat upper surface, a pair of spaced shoulder pads mounted to said upper surface and a head rest;

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a plurality of spring members having a first end connected to the of the carriage and a second end connected to the foot end of the frame; and

a foot support assembly mounted to the frame near the foot end.

20 2. The exercise apparatus of claim 1 wherein

the head rest is adjustable to a first flat position; a second inclined position and a third inclined position in respect to the carriage mat.

3. The exercise apparatus of claim 1 further comprising

a Pilates long/short box with partially open long wall surfaces, such that the box may be interchangeably positioned

lengthwise on the carriage, in order to perform a first set of reformer exercises;

crosswise on the carriage, in order to perform a second set of reformer exercises; and

lengthwise across the carriage side rails at the head of the frame, in order to perform chair exercises.

4. The exercise apparatus of claim 1 wherein

the foot support assembly may be adjusted.

5. The exercise apparatus of claim 1 wherein

the headrest and shoulder pad assembly may be rotated away and downward from the carriage surface so that a conversion mat may be positioned on the reformer frame in order to provide a flat work surface for other exercises.

6. The exercise apparatus of claim 1 further comprising

a first pole section in proximity to the head of the left rail; and  
a second pole section in proximity to the head of the right rail.

7. The exercise apparatus of claim 6 further comprising

a first pole extension section removably inserted in the first pole section; and  
a second pole extension section removably inserted in the second pole section.

8. The exercise apparatus of claim 6 further comprising

- 5 a right adjustable and flexible pulley mechanism mounted on a right riser  
mounted on the first pole section, the right pulley mechanism comprising  
a pulley bracket support having a height adjustment means,  
a pulley mount,  
a pulley roller core, and  
10 a flexible, articulating connection means between the pulley bracket  
support and the pulley mount, such that the pulley bracket mount may  
move relative to the pulley bracket support in order to reduce binding of  
the pulley during operation; and  
a left adjustable and flexible pulley mechanism mounted on a left riser mounted  
15 on the second pole section, the right pulley mechanism comprising.  
a pulley bracket support having a height adjustment means,  
a pulley mount,  
a pulley roller core, and  
a flexible, articulating connection means between the pulley bracket  
20 support and the pulley mount, such that the pulley bracket mount may  
move relative to the pulley bracket support in order to reduce binding of  
the pulley during operation.

9. The exercise apparatus of claim 8 wherein

the pulley roller core is interchangeable to accommodate either ropes or flat straps.

5 10. The exercise apparatus of claim 8 wherein

the flexible connection means is selected from the group consisting of a cable, two interlocking eyebolts, or one eyebolt interlocking with a mount integral to the pulley bracket.

10 11. The exercise apparatus of claim 8 wherein

the pulley bracket is mounted on a riser such that the riser may be rotated from a first position wherein the pulleys are positioned between the pole sections and the carriage mat, so that the user may operate ropes or straps while in a reformer mode,

15 to a second position wherein the bracket secures a box positioned on the rails when the reformer is used in a chair mode, and a third position wherein the bracket is rotated out of the way for storage when the reformer is used in a pole system mode.

20 12. The exercise apparatus of claim 8 wherein

a riser is mounted on the pole section; and

the height adjustment means comprises a slot in the riser, such that the pulley mount may be positioned at different heights in the slot.

13. The exercise apparatus of claim 1 further comprising

a spring adjustment mechanism, such that the first end of the spring members are connected to a spring gear bar which may be placed in various positions in a spring bar adjustment bracket attached to the carriage in order to adjust the distance of the carriage from the foot end, such that the various positions set the carriage at variable distances in relation to the foot bar, thereby enabling the accommodation of different body types.

14. The exercise apparatus of claim 13 wherein

there are at least four carriage positions, such that three positions are Pilates one, two, and three carriage positions, and a fourth position is a negative one position, wherein the carriage is closer to the foot base than in the one position.

15. The exercise apparatus of claim 13 further comprising

a plurality of markings on at least one rail, such that each marking represents a proper carriage position corresponding to spring bar adjustment bracket position.

16. The exercise apparatus of claim 13 further comprising

a means for a user to change the position of the spring gear bar in the spring bar adjustment bracket without disembarking from the carriage.

17. The exercise apparatus of claim 16 further comprising

a release mechanism such that the spring gear bar may be removed from a position in the spring bar adjustment bracket when the release mechanism is engaged; and

5 a retention mechanism such that the spring gear bar may be held in a position in the spring bar adjustment bracket when the release mechanism is disengaged.

18. The exercise apparatus of claim 17 wherein

the release mechanism is selected from the group consisting of at least one cable, such that pulling on the cable engages the release mechanism, and releasing the cable disengages the release mechanism; or at least one rigid bar, such that pulling on the bar engages the release mechanism, and releasing the bar disengages the release mechanism.

15 19. The exercise apparatus of claim 1 further comprising

a left base pole located near the head end of the left rail, such that the left base pole supports the left rail front section;

a left rail front pivot means, such that the left rail front section may rotate with respect to the left ;

20 a right base pole located near the head end of the right rail, such that the right base pole supports the right rail front section; and

a right rail front pivot means, such that the right rail front section may rotate with respect to the right .

20. The exercise apparatus of claim 19 further comprising

a foot base, the foot base including at least one wheel such that the foot base may roll toward the head as the left rail is folded along the left hinge and the right rail is folded along the right hinge; and

a head base located near the head of the left rail and right rail, such that the left base pole and the right base pole are supported in the head base, and such that the head base remains stationary while the foot base is rolled into a folding position.

21. The exercise apparatus of claim 20 wherein

the head base has at least one wheel such that once the unit is folded into a vertical folded position, the folded apparatus may be moved by rolling it on the wheel.

22. The exercise apparatus of claim 21 wherein

the foot head base has at least two wheels; and

the head base has a rear inclined face such that the wheels may be rolled up the inclined face as the unit is rolled into a vertical folded position.

23. An exercise apparatus comprising:

a generally rectangular frame having  
a head end

a head end support including a head base with at least two wheels, a left base pole and a right base pole,

a left riser mounted on the left base pole,

a right riser mounted on the right base pole,

5 a foot end,

a wheeled foot end support,

a left rail comprising

a left rail front section,

a left rail front section pivot support integral to the left base pole,

10 a left rail rear section,

a left rail hinge connecting the left rail front section and the left rail rear section, such that the left rail front section may be folded with respect to the left rail rear section,

a right rail comprising

15 a right rail front section,

a right rail front section pivot support integral to the right base pole,

a right rail rear section,

a right rail hinge connecting the right rail front section and the right rail rear section, such that the right rail front section may be folded with

20 respect to the right rail rear section;

a movable carriage mounted on the frame, such that the carriage may be moved along the left rail and the right rail between the head end and the foot end, the



carriage having a generally flat upper surface, a pair of spaced shoulder stops mounted to said upper surface and an adjustable head rest;  
 an height-adjustable and flexible left pulley mechanism attached to the left riser;  
 an height-adjustable and flexible right pulley mechanism attached to the right riser;

a plurality of interchangeable springs having a first end connected to a rod which may be positioned into one of several slots affixed to the underside of the carriage and a second end connected to the foot end of the frame;

a gear mechanism to assist in changing the position of the rod from one slot to another slot; and

an adjustable foot support assembly mounted to the frame near the foot end.

24. The exercise apparatus of claim 23 further comprising

a means for removably securing a Pilates long/short box over the head portion of the left rail and the right rail, thereby permitting Pilates chair exercises on the box.

25. The exercise apparatus of claim 23 further comprising

a means for inverting the headrest so that a separate mat be placed over a portion of the left rail and the right rail, thereby permitting Pilates mat exercises on the mat and carriage.

26. The exercise apparatus of claim 23 further comprising

a means for removably attaching a left pole extension on the left base pole; and

a means for removably attaching a right pole extension on the right base pole, such that a push through bar may be positioned between the left pole extension and the right pole extension, thereby permitting Pilates pole exercises.

5 27. The exercise apparatus of claim 23 wherein

there are at least four slots, such that three slots correspond to Pilates one, two, and three carriage positions, and a fourth slot corresponds to a negative one position, wherein the carriage is closer to the foot base than in the one position.

10 28. An improved reformer, the improvement comprising:

A first hinged rail such that the rail may be folded from an extended position into an upright position; and

A second hinged rail such that the rail may be folded from an extended position into an upright position.

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29. The improved reformer of claim 28 further comprising

a means for a user to change the position of the spring gear bar in the spring bar adjustment bracket without disembarking from the carriage.

20 30. The exercise apparatus of claim 29 further comprising

a release mechanism such that the spring gear bar may be removed from a position in the spring bar adjustment bracket when the release mechanism is engaged; and

a retention mechanism such that the spring gear bar may be held in a position in the spring bar adjustment bracket when the release mechanism is disengaged.

31. The improved reformer of claim 28 further comprising

5 a rotatable pulley assembly such that ropes and straps may be pulled through a pulley from various positions of the carriage in various heights of the pulley without bind.

32. The improved reformer of claim 28 further comprising a pole assembly, the pole  
10 assembly comprising

a head base;

a right head base pole;

a left head base pole;

a right pole extension removably attached to the right head base pole;

15 a left pole extension removably attached to the left head base pole; and

a push through bar attached to the right pole extension and the left pole extension, such that Pilates pole exercises may be conducted on the reformer and pole assembly.

20 33. The improved reformer of claim 28 further comprising

a Pilates long/short box with partially open long wall surfaces, such that the box may be interchangeably positioned

lengthwise on the carriage, in order to perform a first set of reformer exercises;

crosswise on the carriage, in order to perform a second set of reformer exercises; and

5 lengthwise across the carriage side rails at the head of the frame, in order to perform chair exercises.

34. An interchangeable Pilates exercise system comprising

a reformer comprising

10 a pair of carriage rails, and

a movable carriage including a foldable headrest and shoulder rest assembly, such that the assembly may be folded to a flat position;

a pole extension assembly removably attachable to the reformer, such that pole exercises may be performed on the pole extension; and

15 a modified long/short box, such that the box may be placed lengthwise or crosswise on the carriage for reformer exercises, or placed on the carriage rails to perform chair exercises.

35. The exercise system of claim 34 further comprising

20 a removable mat which may be placed over the carriage rails and the folded down headrest and shoulder rest assembly to create a flat surface in conjunction with the carriage.

36. A method for storing and transporting a reformer exercise apparatus having a first rail, a first rail head section, a first rail head section support, a first rail foot section, and a first rail foot section support, and a second rail, a second rail head section, a second rail head section support, a second rail foot section, and a second rail foot section support, the method comprising

folding the reformer frame from an extended lateral position to a vertical folded position by

lifting the frame near the hinged intersection of the first rail head section and the first rail foot section and near the hinged intersection of the second rail head section and the second rail foot section,

rolling the first rail foot sections and the second rail foot section toward the head of the reformer,

pivoting the head section of the first rail on its head section support,

pivoting the head section of the second rail on its head section support,

continuing to roll the first rail foot sections and the second rail foot section toward the head of the reformer until the reformer is in a folded vertical position;

securing the reformer into a folded vertical position;

tilting the folded reformer so that wheels on the right and left head section supports contact the floor;

rolling the folded reformer to a desired position; and

tilting the reformer back into a vertical position.